Counteractuals, Counterfactuals and Semantic Intuitions

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Jesper Kallestrup [1,*]

Email jesper.kallestrup@ed.ac.uk

[1] School of Philosophy, Psychology and Language Sciences, The University of Edinburgh, Dugald Stewart Building 3, Charles Street, Edinburgh, EH8 9 AD UK

Abstract

Machery et al. (*Cognition* 92: B1–B12, 2004; *Philosophy and Phenomenological Research* 79: 332–356, 2009a, *Analysis* 69: 689–694, b; *Philosophy and Phenomenological Research* 86: 618–635, 2012) claim that analytic philosophers of language are committed to a method of cases (MC) according to which theories of reference are assessed by consulting semantic intuitions about actual and possible cases. Since empirical evidence suggests that such intuitions vary both within and across cultures, these experimental semanticists conclude that the traditional attempt at pursuing such theories is misguided. Against the backdrop of Kripke's anti-descriptivist arguments, this paper offers a novel response to the challenge posed by Machery et al., arguing that they either misplace or exaggerate the role played by (MC). The lesson is that while semantic intuitions carry evidential weight in evaluating certain subjunctive conditionals reflecting counterfactual possibilities, they neither play an epistemic role in determining the actual reference of proper names, nor in evaluating certain indicative conditionals reflecting so-called counteractual possibilities. Moreover, once an asymmetry is acknowledged in Machery et al's vignette between the narrator and the subject's suppositions about the actual world, a corresponding ambiguity can account for the alleged culturally determined variation in semantic intuitions.

1. Experimental Semantics

Machery et al. (2004; Machery et al. 2009a, b; 2012), henceforth MMNS, claim that the way analytic philosophers of language determine which theory of reference is correct is by appeal to intuitions about the reference of terms in actual and possible cases. For instance, Kripke (1980) proposed cases designed to elicit widespread semantic intuitions that were inconsistent with descriptivism. In so doing MMNS (op. cit.) maintain that Kripke embraced what they call 'the method of cases' (MC):

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The correct theory of reference for a class of terms T is the theory which is best supported by the intuitions competent users of T have about the reference of members of T across actual and possible cases.

Obviously, (MC) presupposes a sufficient degree of uniformity of pertinent intuitions among users of T. Otherwise their intuitions would have little or no evidential bearing on the theory of reference in question. After all, MMNS are interested in theories of semantic reference which purport to account for the reference of members of T irrespective of which particular contexts its users are in. Adopting a variant of Kripke's Gödel case, MMNS present empirical evidence for inter- and intra-cultural variation in semantic intuitions. Against the backdrop of (MC), they take such evidence to raise skeptical questions about the philosophical attempt to pursue a theory of reference. As we shall see, Devitt (2010: 419) and Ichikawa et al. (2012: 5–10) correctly point out that the Gödel case plays a much smaller role in Kripke's overall argument against descriptivism than MMNS (2004) assume. MMNS (2012) emphasize more cagily that their goal was never to question the attack that Kripke launched on descriptivism as such, but much broader: to challenge the way philosophers of language go about determining what the right theory of reference is. Perhaps MMNS are thus only interested in evidence that bears directly on developing a full-fledged theory of reference. But as the semantic intuition elicited by the Gödel case only aims to present trouble for descriptivism, and thus at best only indirectly supports Kripke's preferred causal-historical alternative, that case would consequently be rendered idle by their lights. These considerations suggest that MMNS' goal is best understood as including critiques of rival

theories. In keeping with the response literature, we shall be concerned with the way Kripke goes about determining whether descriptivism is true, and in particular whether MMNS are right that Kripke's intuition-based arguments are flawed due to intuitional variation within and across cultures.[1] This paper offers a novel response to the challenge posed by experimental semantics, arguing that MMNS either misplace or exaggerate the role played by (MC) in the anti-descriptivist arguments that Kripke advanced. Section II shows that Kripke appealed to something like (MC) in his modal argument against the view that proper names are synonymous with commonly associated descriptions, yet MMNS (2012) are explicitly not concerned with this view. While semantic intuitions can be taken to play an epistemic role in evaluating subjunctive conditionals reflecting counterfactual possibilities, Kripke also paved the way for an underlying explanation of rigidity. Section III demonstrates that no appeal was made to (MC) in Kripke's semantic arguments against the weaker view that MMNS have in mind, namely that proper names have their reference fixed descriptively. Intuitions neither play an epistemic role in determining the actual reference of proper names, nor in evaluating indicative conditionals reflecting so-called counteractual possibilities. Section IV argues that once an asymmetry is acknowledged in MMNS' vignette between the narrator and the subject's suppositions about the actual world, a corresponding ambiguity can account for the alleged culturally determined variation in semantic intuitions. That is to say, depending on which suppositional perspective the participants adopt, it turns out their answers do not reliably indicate which theory of reference they implicitly adhere to. Finally, Section V contains some concluding remarks.

2. The Modal Argument: Intuitions About Counterfactuals

Let's adopt Soames' (2005: 19, 69) distinction between strong descriptivism—the view that definite description D_D commonly associated with proper name *n* by competent speaker S yields the semantic content of *n* such that *n* refers to whatever object at possible world *w* satisfies D_D—and weak descriptivism—the view that D_D fixes the reference of *n* such that *n* refers to whatever object in the actual world (@) satisfies D_D, no matter how @ turns out. Adopting this distinction helps to clarify the difference between Kripke's modal and semantic

arguments, which we shall discuss in Sections II and III, respectively. Four comments are worth bearing in mind. First, both weak and strong descriptivism are views about how our language actually works, as opposed to the way any possible language works. Second, for ease of exposition, we restrict attention to single-description versions of strong and weak descriptivism. We briefly consider cluster versions in Section III. Third, only strong descriptivism is a view in descriptive semantics about the semantic content of *n*. Weak descriptivism takes no stance on what content is semantically expressed by *n*. Fourth, only strong descriptivism says that the reference of *n* at *w* is semantically determined by satisfaction of D_D. According to weak descriptivism, once the reference of *n* is fixed descriptively, *n* is stipulated to retain that reference at all *w*.[2]

In contrast, the causal-historical view says that once *n* is introduced into language by some act of baptism, *n* retains the same reference as long as its users are linked to that original act via a causal-historical chain of successive users. Again, three observations are in order. First, just as in the case of descriptivism, this view only pertains to the actual workings of our language. Second, this is a view in foundational semantics about what makes *n* have the reference that *n* has. Third, advocates of the causal-historical view typically allow for the rarity of descriptive names having their reference in @ fixed descriptively, but once they are up and running, D_D plays no further reference-determining role. If object x has the property expressed by the reference-fixing D_D, the descriptive name refers rigidly to x, even at a *w* where x fails to have that property.

Let's now probe into the role intuitions play in Kripke's modal argument as leveled against strong descriptivism. The argument runs as follows:

(1) If strong descriptivism is true, then a proper name *n* and a definite description D_D, both actually used in our language, have the same semantic content.

(2) If *n* and D_D coincide in semantic content, then they are intersubstitutable in sentences where they are embedded under standard modal operators without change in truth-value.

(3) But as *n* is a rigid designator and D_D is non-rigid, substituting *n* with D_D in such modal contexts results in truth-value changes.

(4) So, strong descriptivism is false.

As (1) is true by definition and (2) follows on the assumption that modal properties individuate semantic content, intuitions play no role in justifying either premise. In support of (3) Kripke (1980: 48–49, 83–92) proposed an "intuitive test" for rigidity[3]:

(ITR) A referring term *t* is a rigid designator of object x if and only if no one other than x might have been t.

For instance, 'the inventor of LEGO' is non-rigid, because somebody other than the inventor of LEGO, i.e., Kirk Christiansen, might have invented LEGO, but 'Kirk Christiansen' is rigid, because nobody other than Kirk Christiansen might have been Kirk Christiansen.[4] Kripke (1980: 6, cf. 14–15) suggested that the intuition that *n* is rigid stems from the direct referentiality of *n* when describing counterfactual situations, i.e., ways things might have been but are not: we have a "natural" and "direct intuition of the rigidity of proper names, exhibited in our understanding of the truth-conditions of particular sentences." He asked us to consider the simple sentence:

(5) Aristotle was fond of dogs

Assuming 'Aristotle' is directly referential, (5) has the singular truth-condition: there is a man, namely Aristotle, such that (5) true if and only if he was fond of dogs. Our intuition that 'Aristotle' is rigid is grounded in the fact that the same truth-condition applies as (5) describes a counterfactual situation: (5) truly describes such a situation just in case the same man would have been fond of dogs had that situation obtained.

It is thus clear that Kripke appealed to intuitions when arguing that proper names are rigid. The question is whether that appeal is epistemic in the sense that semantic intuitions are taken to provide evidential support for the claim that proper names are rigid. Pace Bealer (2002, 2004) and many other meta-

philosophers, Cappelen (2012) contends that contemporary analytic philosophers neither rely on intuitions as evidence for their theories, nor rely evidentially on intuitions when making judgments about cases. In particular, Cappelen claims that Kripke took 'intuitively, *p*' to mean something close to: pre-theoretically, p, where being pre-theoretic is not being prior to all theorizing, but rather being independent of the answer to the question under discussion in the context. Importantly, "there is no evidence that [Kripke] treats being intuitive as carrying evidential weight" (2012: 73, fn. 15). Note that Cappelen is here making a purely descriptive claim about what Kripke treats as evidence, not a claim about what his evidence actually is. But Cappelen is wrong about key occurrences of 'intuitive'. Take this passage (1980: 42), immediately before (ITR) is introduced:

> "…some philosophers think that something's having intuitive content is very inconclusive evidence in favor of it. I think it is very heavy evidence in favor of anything, myself. I really don't know, in a way, what more conclusive evidence one can have about anything, ultimately speaking."

Here Kripke says he is treating the intuitive content of proposition *p* to constitute evidence for *p*. Since Kripke (1980: 48) also explicitly takes the content of the thesis that proper names are rigid to be intuitive, it follows that he takes himself to be regarding the intuitive content of that thesis to constitute evidence for it. But perhaps, following Cappelen (2012: 206), Kripke is amongst those who are methodologically self-deceived on this score:

> "…some philosophers in moments of confused meta-reflection will often describe what they do as relying on intuitions…".

That Kripke should be mistaken not just about what his evidence for the rigidity thesis is, but also about what he regards as his evidence, seems exceedingly unlikely. True, he offers no theory of how to cash out talk about intuitions, e.g., as Bealer's (2002: 73) intellectual seemings, or as Williamson's (2004: 125) conscious inclinations to believe or judge. I shall not here delve into any exegetical details, but it would indeed be puzzling why Kripke proposed (ITR)

in the first place if he did not consider it a reliable way of settling questions about rigidity, hence regarded passing the test as furnishing evidence for rigidity. As witnessed by the passage just quoted, Kripke took being intuitive as providing "very heavy" and "conclusive" evidence for a thesis. Admittedly, one might want to eschew exuberant contentions such as that intuitions confer foundational or indefeasible evidential support, and instead rest content with the more modest claim that intuitions provide prime facie evidence. In any case, Kripke is plausibly understood to be utilizing intuitions about rigidity as serving an epistemic purpose in his modal argument against strong descriptivism.

The foregoing suggests that Kripke would endorse (MC) vis-à-vis his modal argument against strong descriptivism, given that Kripke takes this view to make predictions about the reference of proper names at counterfactual worlds which contradict the intuitions that competent users of those names have about their reference at such worlds. As a theory of reference for proper names, strong descriptivism is therefore incorrect. In the remaining part of this section, we shall argue that Kripke's adherence to (MC) does not commit him to a psychologically spurious faculty of intuition. First off, distinguish between what serves as evidence and what the source of that evidence is. To say that consulting intuitions about cases evidentially supports a proposition *p* is not the same as saying that the act of having the intuition that *q* serves as evidence for *p*. Rather, *q* is the evidence for *p*, but the source of that evidence stems from the act of having an intuition with *q* as its content. This means that as long as *q* concerns non-psychological matters, intuitions can carry evidential weight without thereby psychologizing evidence in the skepticism-inducing way that Williamson (2007: 214, 235) warns against. Moreover, having an intuition that *q* need not be a psychological act that results from exercising some dubious faculty of intuition, such as forms of intellectual perception which may strike one as mysterious. Importantly, none of the premises in Kripke's modal argument relies on any such faculty. Here's why. The kind of rigidity Kripke has in mind at this juncture is that of subjunctive rigidity. The question is: given that a proper name *n* refers to object x in @, does *n* refer to x at all counterfactual *w*? As counterfactual possibility is best captured by subjunctive conditionals, we can address this question by evaluating such conditionals containing *n*.[5] Thus, if strong descriptivism is true, then the description 'the inventor of LEGO' and the name 'Kirk Christiansen' coincide in semantic

content. Consequently, the following conditional should be true:

(6) If Hans Beck had invented LEGO, then Kirk Christiansen would have been Hans Beck.

According to a standard Lewisian semantics, (6) is true at @ if some *w* in which Hans Beck invented LEGO and Kirk Christensen = Hans Beck are closer to @ than are any *w* where Hans Beck invented LEGO but Kirk Christensen ≠ Hans Beck, where closeness is a similarity metric on *w*. As Hans Beck and Kirk Christiansen are actually distinct, even if Hans Beck had invented LEGO, which (6) signals that he did not, he would not have been Kirk Christiansen. The closest *w* in question are ones in which Hans Beck invented LEGO instead of Kirk Christiansen. It's unclear how empirical considerations could be brought to bear in determining the similarity between these *w*. The reason we judge (6) to be false is simply that we cannot make room for the thought that two individuals who are distinct in @ should be identical in some counterfactual *w*. Speakers who are competent with the notion of strict identity will judge that two individuals are necessarily identical if actually identical.

Kripke's explanation is rather that in so far as the judgment that (6) is false is based on intuitions about rigidity, these intuitions are rooted in ordinary abilities to use proper names as directly referential terms rather than in a sui generis faculty of intuition.[6] Any speaker S who competently uses *n* has a reliable ability to directly latch onto its referent x in counterfactual thinking. S need not antecedently identify x via satisfaction of some description D_D in the counterfactual *w* in question. If S lacked that ability, S would not be able to engage successfully in such thinking. In particular, if the reference of *n* suddenly shifted in a counterfactual *w* in which some distinct object x* satisfied D_D, S could no longer use *n* to reflect on what would be the case with respect to x had *w* obtained. But given that S is in fact able to correctly determine the truth-value of such subjunctive conditionals containing *n*, knowledge of them must be based on an ability to directly pick out its referent in counterfactual circumstances. That is illustrated by (5) when describing such a circumstance. Importantly, as S can exercise that ability without drawing on empirical knowledge of @, the source of that knowledge is not empirical in any robust sense. For example, knowing that (6) is false is independent of knowledge that Kirk Christiansen invented LEGO. This empirically known fact is simply not

retained under the counterfactual supposition that Hans Beck invented LEGO. In other words, even though speakers initially find (6) false on the basis of consulting their intuition about how to describe counterfactual scenarios given what they know about @, the truth condition of (6) is not relative to any particular knowledge of @. The reason is that such counterfactual possibilities are metaphysical rather than epistemic: when *w* is considered as counterfactual, we ask what might have been the case given the way @ is.

In sum, one can grant with Kripke that speakers rely epistemically on intuitions about how to describe certain counterfactual scenarios when judging that subjunctive conditionals such as (6) are false, without positing a special faculty of intuition. For that judgment is explainable without irreducible appeal to intuitions, once speakers' reliable ability to directly hook onto objects in counterfactual thinking is taken into account. Similarly, the claim in (3) that proper names are rigid and definite descriptions are non-rigid may rely epistemically on semantic intuitions without invoking any such mysterious faculty. The upshot is that since MMNS (2012) disregard strong descriptivism, they ignore the limited role that intuitions play in the modal argument, which is fully explicable in terms of competent speakers' ability to directly pick out objects when entertaining counterfactual scenarios.

3. The Semantic Arguments: Intuitions About Actuals and Counteractuals

Assuming with Kripke that the modal argument refutes strong descriptivism, we now turn to weak descriptivism. The latter view is only afflicted by his semantic arguments, which aim to show that the reference of proper name *n* is not determined via satisfaction of definite description D_D as associated with *n* by S.[7] The semantic arguments comprise two types of actual cases and one type of hypothetical case, which we will deal with in turn. The arguments that pertain to actual cases claim that it is possible that S uses *n* to refer uniquely to object x even though S associates no D_D with *n* which is uniquely satisfied by x, either because S has incorrect descriptive information of x, or because S has correct but not uniquely identifying information of x. In (1980: 81–85) Kripke offers common-or-garden examples of successful usage of proper names, despite ignorance of, or error about, their referents. Here is the argument from error:

(7) If weak descriptivism is true, then S uses proper name *n* competently to refer to x in virtue of associating definite description D_D with *n* which is uniquely satisfied by x, where both *n* and D_D are actually used in our language.

(8) S uses *n* ('Columbus') competently to refer to x (Columbus), but D_D ('the first European explorer to reach the Americas') as associated with *n* by S is uniquely satisfied by distinct object x* (Leif Ericson).

(9) So, weak descriptivism is false.

And here is the argument from ignorance:

(10) If weak descriptivism is true, then S uses proper name *n* competently to refer to x in virtue of associating definite description D_D with *n* which is uniquely satisfied by x, where both *n* and D_D are actually used in our language.

(11) S uses *n* ('Richard Feynman') competently to refer to x (Richard Feynman), but S associates with *n* an indefinite description D_I ('a famous physicist') which is also satisfied by distinct object x* (Marie Curie).

(12) So, weak descriptivism is false.

In conjunction, these two arguments show that there need not be a D_D associated by S with *n* such that S uses *n* competently to refer to x and D_D is uniquely satisfied by x. S might well use *n* competently to refer to x even though no D_D is both uniquely satisfied by x and associated with *n* by S, either because x does not satisfy associated D_D, or else because x satisfies associated D_I but not uniquely so. Hence, no associated D_D determines the reference of *n* as used by S.

The question is now whether intuitions play any epistemic role in justifying the premises of either argument. Friends and foes of experimental semantics think so. For instance, Devitt (2010: 221) says that "intuitions are certainly the basis of all these [semantic] arguments", in fact he (2011: 423) claims that "intuitions

about actual humdrum cases are epistemically more important than intuitions about hypothetical ones." Machery et al. (2012) insist that "philosophers of language typically appeal to the intuitions of competent speakers about the reference of proper names […] in actual […] cases", and they acknowledge "the intuitions about actual cases that form the basis of the argument from error and ignorance". Ichikawa et al (2011: 9) hold that intuitions about real examples are more accurate than intuitions about tricky cases.

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Now, nothing prevents one from having an intuition that, say, 'Ban Ki-moon' refers to Ban Ki-moon, but the claim on the table is that intuitions form the basis of knowledge of the actual reference of proper names. That seems wrong. First off, competent speakers are arguably a priori entitled to a homophonic disquotation device in their own language, assuming no meaning-affecting hypothesis is actually true.[8] This means S can know that in her language 'Ban Ki-moon' refers to Ban Ki-moon without recourse to empirical investigation. Such default entitlements are not underpinned by intuition, but rather accrue with linguistic competence in a given language. However, the fact that S is entitled to disquote her own language implies no identifying knowledge of reference. S certainly cannot know a priori that in her language 'Ban Ki-moon' refers to the 8th Secretary-General of the United Nations, or indeed know a priori anything else about what object Ban Ki-moon is. Nor is such knowledge obtainable merely by consulting intuition. Similarly, the claims in (8) and (11) that S uses 'Columbus' and 'Richard Feynman' competently to refer to Columbus and Richard Feynman, respectively, are not justified by intuitions. Those premises report straightforward facts about names and their referents, which we can know only by first observing correlations between S's linguistic usage and extra-linguistic entities, and then checking against trustworthy dictionaries, encyclopedias, or similar.[9] Since the arguments from ignorance and error merely draw on de facto linguistic practice, we can seek observational knowledge of the reference relation without epistemic reliance on intuitions. Deutsch (2009: 448–9) uses Evans' (1973: 196) 'Madagascar' example to make a similar point. A plain causal-historical theory has it that'Madagascar' refers to a portion of the African mainland in virtue of a causal-historical chain linking past uses having that reference to current ones. Trouble is we now pick

out a large island off Africa's eastern coast. Epistemic appeal to intuition is neither here nor there. The fact that'Madagascar' refers to the island is not known by consulting intuitions. In Deutsch's (op. cit.) words,"Evans could have simply checked his world atlas and seen that'Madagascar' refers to the island." As the other shared premise (7)/(10) is true by definition, the upshot is that the two semantic arguments that concern actual cases do not call upon intuitions to do any epistemic work in supporting the premises of either version.

Let's now proceed to ponder the semantic argument that concerns hypothetical cases. The arguments from error and ignorance leave untouched what Ichikawa et al (2011: 8) call "weak weak descriptivism" according to which D_D determines the reference of *n* only in cases where S does possess such uniquely identifying information. Weak weak descriptivism is thus weaker than weak descriptivism in that weak descriptivism does not qualify the reference-determining role of D_D to such cases. Here is Kripke (1980: 83–84):

Imagine the following blatantly fictional situation… Suppose that Gödel was not in fact the discoverer of the incompleteness theorem. A man named'Schmidt', whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question. His friend Gödel somehow got hold of the manuscript and it was thereafter attributed to Gödel. On the view in question [i.e., the weak weak descriptivist view], then, when our ordinary man uses the proper name'Gödel', he really means to refer to Schmidt, because Schmidt is the unique person satisfying the description'the man who discovered the incompleteness of arithmetic'. Of course you might try changing it to 'the man who *published* the discovery of the incompleteness of arithmetic'. By changing the story a little further one can make even this formulation false. Anyway, most people might not even know whether the thing was published or got around by word of mouth. Let's stick to 'the man who discovered the incompleteness of arithmetic'. So, since the man who discovered the incompleteness of arithmetic is in fact Schmidt, we, when we talk about 'Gödel', are in fact always referring to Schmidt. But it seems to me that we are not. We simply are not.

Kripke (op. cit.) emphasizes that what we are asked to imagine is a "blatantly fictional situation". The claim is not that Gödel failed to discover the incompleteness theorem, or that we lack knowledge that Gödel established the

theorem.[10] Kripke's point (1980: 87) is rather that since our true belief that Gödel was the discoverer is based on historical scholarship, that belief amounts to a posteriori knowledge, and so the "fantasy" about Schmidt cannot be ruled out a priori. We can imagine as false any known proposition *p* for which we have only empirical evidence, in the sense that *p* might be false for all we know a priori. It follows that we can imagine as true any ("blatantly fictional") proposition *q* the truth of which is incompatible with the truth of *p*, in the sense that *q* might be true for all we know a priori.

The pressing question is now which kind of possibility is being envisaged in the Gödel case. Both experimental semanticists and their opponents have uncritically assumed that a counterfactual scenario is being described, i.e., a way things might have been but are not. Deutsch (2009: 451), Ichikawa et al (2011: 11), Devitt (2010: 423), Machery et al. (2012) and Genone (2012: 154) are cases in point. The remainder of this section argues that the example pertains instead to a counteractual scenario, i.e., a way things might actually (turn out to) be.[11] Their misunderstanding is exegetically interesting, but the more important lesson is about the role of intuitions in those indicative conditionals that reflect counteractual possibilities.[12] Section IV then argues that MMNS' vignette is afflicted by an ambiguity to do precisely with counteractual suppositions.

The first indication that the Gödel case concerns a counteractual scenario is the occurrence of the locutions "in fact" and "actual". We are being asked to imagine that the actual world might be such that Schmidt rather than Gödel discovered the incompleteness theorem. As mentioned, we know a posteriori that Gödel proved the theorem, and so there is no possible world consistent with our empirical evidence in which Gödel failed to prove it, but we can still conceive of a world where Schmidt is the discoverer as actual, in the sense of it being a possibility for all we know a priori. Also, had Kripke intended a counterfactual scenario, surely he would have used subjunctive terminology or alethic modalities to describe the case, as he does with 'Benjamin Franklin' and 'Hesperus' (1980: 57–58, 145–146). The lack of subjunctive mood suggests that was not his intention. Further, at this stage in the dialectics, Kripke is criticizing the weak descriptivist claim that D_D is a reference-fixer of *n* in the actual world (@) regardless of how @ turns out. His claim is that this view is false, not just when S is ignorant or mistaken, but even when S has uniquely

identifying information about *n*'s referent. And the way to argue for that is to show that S uses *n* to refer to its actual referent x even if @ might be such that x fails to satisfy an associated D_D. So, in the Gödel case, S is mistaken about who satisfies D_D in *w* taken as a candidate for @, whereas in the argument from error S is mistaken about who satisfies D_D in @, yet in both cases does S use *n* to refer to x. We can regiment the reasoning as follows:

(13) If weak weak descriptivism is true, then S uses proper name *n* competently to refer to x in all *w* considered as actual in virtue of associating definite description D_D with *n* which is uniquely satisfied by x, where both *n* and D_D are actually used in our language

(14) S uses *n* ('Gödel') competently to refer to x (Gödel) in all *w* considered as actual, but D_D ('the discoverer of the incompleteness theorem') as associated with *n* by S is uniquely satisfied by distinct object x* (Schmidt) in *w** considered as actual

(15) So, weak weak descriptivism is false

In contrast, the modal argument pertains to the reference of *n* at *w* considered as counterfactual.[13] As Salmon (2005: 30) notes, the question in the modal argument is what the truth-value of a sentence containing *n* becomes when evaluated at certain possible circumstances. In this semantic argument, however, the issue is not whom *n* actually refers to at the imagined circumstances, but the more direct and non-modal issue of whom *n* would refer to were those circumstances to obtain. Compare with Donnellan's Thales example (1970: 352–353):

[All most people know of Thales is that he was the Greek philosopher who held that all is water]. But suppose no one to have held the ridiculous doctrine that all is water, but that Aristotle and Herodotus were referring to […] a real person who was not a philosopher, but a well-digger with a reputation for saying wise things and who once exclaimed 'I wish everything were water so I wouldn't have to dig these damned wells'. Have [our histories of philosophy] mentioned a non-existent person or have they mentioned someone who existed but who did not have the properties they attribute to him? My inclination is to say the latter. Yet ignoring the history of these uses of the proper name 'Thales', [weak weak

descriptivism] would tell us that Thales did not exist. But then to whom were Aristotle and Herodotus referring? Surely we cannot conclude,'to no one'.

In this passage, Donnellan asks us to make a supposition about a way @ might turn out. In effect, he argues that if weak weak descriptivism is true such that 'the Greek philosopher who held that all is water' fixes the reference of 'Thales' in @, then 'Thales' is empty in *w* considered as actual in which no single Greek philosopher uniquely held that philosophical doctrine. But since Aristotle and Herodotus could certainly be mistaken about which contingent properties Thales had, e.g., we could discover that he was after all a well-digger, then 'Thales' refers to Thales even in that *w*. For if, as weak weak descriptivism predicts, we have to say that Thales did not exist in that *w*, then the commonplace possibility that we should be deceived about what he did and said would be illusory.

Unlike the modal argument where we ask the counterfactual question of what might have been the case given the way @ is, in Kripke and Donnellan's versions of the semantic argument, we ask the counteractual question of what is the case if a hypothesis *H* about @ is true. We can say that *H* is true in counteractual *w* if and only if *H* is the case if it turns out *w* does in fact obtain. Given that Gödel ≠ Schmidt in @, it's metaphysically impossible that Gödel = Schmidt. But as we cannot rule out a priori that Gödel = Schmidt, that identity is an epistemic possibility in the sense of there being, as Kripke (1980: 152) put it, a "qualitatively identical epistemic situation" in which Schmidt is responsible for all the Gödel-appearances. On Kripke's view, since the reference of'Gödel' is not fixed descriptively, strictly speaking, that Gödel ≠ Schmidt could not have turned out otherwise. When we consider *w* as a candidate for @, we make a hypothesis about the way that @ is, though we need not believe that @ is that way, indeed we often know a posteriori that @ is not that way. Following Chalmers (2004: 179, 182; 2006: 77, 80; 2011: 105), counteractual possibilities, such as those entertained in the Gödel and Thales cases, are best captured by indicative conditionals[14]:

(16) If Schmidt discovered the incompleteness theorem, then Schmidt = Gödel.

(17) If no single individual is a Greek philosopher who held that all is water,

then Thales did not exist.

Following Chalmers (op. cit.), these indicative conditionals behave epistemically, turning on whether an appropriate epistemic relation between the antecedent and the consequent obtain. That allows for the possibility of offering a possible worlds account despite the consequent in (16) seeming to be metaphysically impossible. Thus, (16) is true if and only if the epistemically closest scenario in which Schmidt discovered the incompleteness theorem is a scenario in which Schmidt = Gödel. Scenarios, or *w* considered as actual, (or centered *w* as ordered sets of S and a time *t* in *w*) are epistemic possibilities in that they are ways things might be for all S knows a priori. Likewise, we can say a proposition *p* is epistemically possible just in case ¬*p* is not a priori knowable. Scenarios comprise Chalmers' epistemic space: the space of ways things might be for all S knows a priori. One scenario is epistemically closer than another for S to the extent that it is more compatible with S's knowledge. Epistemic closeness is thus subject-relative, and depends on what S knows.[15] Take the epistemically closest scenario verifying 'Schmidt discovered the incompleteness theorem'. Verification is used as an epistemic notion that concerns ways @ might be. We can thus say that proposition *p* is epistemically possible if and only if there is a scenario that verifies *p*. The scenario most compatible with S's knowledge is one in which Schmidt discovered the incompleteness theorem instead of Gödel. For S has identifying knowledge of Gödel other than being the discoverer of that theorem, and distinct from S's identifying knowledge of Schmidt. Thereafter, the manuscript was somehow attributed to Gödel but not Schmidt. This scenario thus falsifies 'Schmidt = Gödel'. Since the epistemically closest scenario verifying the antecedent is one that falsifies the consequent, (16) is false. Likewise, (17) is true if and only if the epistemically closest scenario in which no single Greek philosopher held the view that all is water is a scenario in which Thales is non-existent. Take the epistemically closest scenario verifying 'no single Greek philosopher held the view that all is water'. The scenario most compatible with our knowledge is one in which either Thales did not hold that view or he took up some other profession such as well-digging. This scenario thus falsifies 'Thales did not exist'. Since the epistemically closest scenario verifying the antecedent is one that falsifies the consequent, (17) is also false.[16]

The key point is now that, in keeping with both the letter and spirit of Kripke and Donnellan's texts, semantic intuitions play no role in determining the truth-value of these indicative conditionals, nor therefore does the invariability of such intuitions play any such role. In contrast, as shown in Section II, semantic intuitions do play a role in determining the truth-value of corresponding subjunctive conditionals. Relatedly, in contrast with the modal argument, neither Kripke nor Donnellan make any evidential appeal to intuitions in the course of their respective semantic arguments.[17] Although Cappelen (2012) does not discuss these semantic arguments, they lend some support to his claim that philosophers do not rely on intuitions as evidence for their theories. All that is brought to bear is identifying, empirical knowledge of Gödel and Thales, plus the admission of epistemic fallibility. With that in mind, let's revisit Kripke's semantic argument (13) – (15). As (13) is true by definition, the question is whether the justification of (14) hangs on intuition. We are being asked to envisage a scenario in which Schmidt was the unique discoverer of the incompleteness theorem. (14) has it that in that scenario S uses 'Gödel' to refer to Gödel rather than Schmidt, and so S will reject the claim that Schmidt = Gödel. But that is exactly what the negation of (16) says: if Schmidt discovered the incompleteness theorem, then Schmidt ≠ Gödel. Since semantic intuitions play no role in determining the truth-value of (16), neither do they play a role in justifying (14). MMNS once more overstate the importance of the epistemic role of intuitions in that (MC) simply finds no application in the semantic arguments.

If Kripke and Donnellan are right, then ordinary proper names do not function as descriptive names in the way Evans' (1979) 'Julius' or Kripke's (1980: 79) 'Jack the Ripper' do. Thus, if 'Julius' is stipulated to refer to whoever in @ invented the zip fastener, then even on the assumption that S knows that Whitcomb L. Judson invented the zip fastener, S will judge the following true:

(18) If Lord Kelvin invented the zip fastener, then Lord Kelvin = Julius

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After all, the antecedent in (18) expresses a genuine epistemic possibility, at least if understood as being compatible with what S knows a priori. Put differently, descriptive names are subjunctively rigid, but epistemically non-

rigid: they refer to the same object at every counterfactual *w* but to different objects in different counteractual *w*. Kripke and Donnellan arguably took proper names to be both subjunctively and epistemically rigid. Such names cannot refer to objects other than their actual bearers without a change in their semantic contents. This follows if, as direct referentialists maintain, their semantic contributions are stated in object-dependent ways.[18] In particular, the Gödel and Thales cases lend support to the epistemic rigidity of proper names. In contrast, Chalmers (2011: 85) denies the existence of epistemically rigid terms for concrete objects: no term picks out the same concrete object in all scenarios. Since, on his view, the referents of epistemically rigid terms do not vary with empirical variation in how @ turns out, those referents are a priori available. So, no concrete object is a priori available as the referent of a term. Note, however, that Chalmers would not consider (16) and (17) true as he eschews such an unadorned version of weak descriptivism. Contrast (16) with:

(19) If Schmidt discovered the incompleteness theorem, is the causal origin of our use of 'Gödel', is the individual called 'Gödel' by expert speakers, etc., then it turns out that Schmidt = Gödel

Although very improbable, if @ turns out to be such that all these Gödel-appearances are due to Schmidt, then on Chalmers' view it turns out that Gödel = Schmidt. Hence (19) is true.[19] The information in the antecedent need not amount to a cluster of D_D that uniquely picks out the referent of 'Gödel'. Rather, if all identifying information that is believed to be true of Gödel is instead true of Schmidt, then it turns out that Schmidt = Gödel. That we are wrong about @ in those respects is an epistemic possibility: a hypothesis about @ which cannot be ruled out a priori. A scenario verifying 'Schmidt = Gödel' is one in which someone managed to mislead us into believing there were two distinct individuals, one going under the name 'Schmidt' who died under mysterious circumstances in Vienna, and another named 'Gödel' who discovered the incompleteness theorem.

4. Experimental Semantics Revisited

Let's now revisit the charge that MMNS level against Kripke and other analytic philosophers of language. To recap their master argument (2004: 1):

(20) "Theories of reference are assessed by consulting one's intuitions about the reference of terms in hypothetical situations."

(21) "In light of recent work in cultural psychology showing systematic cognitive differences between East Asians and Westerners […], an experiment was conducted which […] indicated that Westerners are more likely than East Asians to report intuitions that are consistent with the causal-historical view."

(22) "These results constitute prima facie evidence that semantic intuitions vary from culture to culture."

(23) "This fact raises questions about the nature of the philosophical enterprise of developing a theory of reference."

Premise (20) is basically a restatement of (MC). Premise (21) draws on Nisbett et al. (2001), showing that culture plays a dramatic role in shaping human cognition. In particular, there are large and systematic differences between East Asians (EAs) and Westerners (Ws) on a number of basic cognitive processes, including perception, attention and memory. The cross-cultural work indicates that EAs are more inclined to judge holistically on the basis of similarity, whereas Ws are more disposed to analyze and make causation-based judgments in describing reality.

This dissimilar focus suggests there might be a related cross-cultural difference in semantic intuitions. MMNS predicted that when presented with the Gödel case, EAs are more likely to respond in accordance with the descriptivist account on which the referent x of *n* has to satisfy D_D, while Ws are more likely to respond in accordance with the causal-historical account on which x need only figure in the causal history of the current use of *n*. To test this prediction, MMNS (2004: 6–8) presented a group of US students and a group of Chinese students, both fluent speakers of English, with a vignette closely modeled on Kripke's own example:

Suppose that John has learned in College that Gödel is the man who proved an important mathematical theorem, called the incompleteness of arithmetic. John

is quite good at mathematics and he can give an accurate statement of the incompleteness theorem, which he attributes to Gödel as the discoverer. But this is the only thing he has heard about Gödel. Now suppose Gödel was not the author of this theorem. A man called 'Schmidt' whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question. His friend Gödel somehow got hold of the manuscript and claimed credit for the work, which was thereafter attributed to Gödel. Thus he has been known as the man who proved the incompleteness of arithmetic. Most people who have heard the name'Gödel' are like John; the claim that Gödel discovered the incompleteness theorem is the only thing they have ever heard about Gödel. When John uses the name 'Gödel', is he talking about:

(A) the person who really discovered the incompleteness of arithmetic? or

(B) the person who got hold of the manuscript and claimed credit for the work?

MMNS found that semantic intuitions, as elicited by this probe, vary both across and within cultures: a majority of Americans gave the causal-historical response (B), but a sizable minority of the population (45 %) gave the descriptivist response (A). In contrast, a majority of Chinese participants chose (A), but a sizable minority (30 %) chose (B). Thus, evidence suggests analytic philosophers of language should be wary of assuming upfront the universality of their own semantic intuitions. But if such intuitions provide no reliable guide to semantic properties, then given (MC), it seems the attempt to construct a theory of reference is misguided.

Here is a non-exhaustive list of already published objections to (20) – (23). (i) As mentioned earlier, Ichikawa et al. (2011) and Devitt (2010) point out that intuitions about the hypothetical Gödel case play at best a limited role in Kripke's broader arguments, so experimental data undermining their regularity do not cast serious doubt on his attack on weak descriptivism. (ii) Devitt (2010) argues that since semantic intuitions arise from reflection on linguistic data, philosophers who aim to find the correct theory of reference should prefer those intuitions that are informed by a cautious examination of the philosophical significance of the probes to unschooled intuitions of the folk. (iii) Ludwig (2007) and Deutsch (2009) suggest the question at the end of the vignette is

ambiguous in that Kripke advanced a theory of semantic reference, but when asked who John is talking about when using ‘Gödel’, many will take this to be a question about (pragmatic) speaker’s reference. (iv) Marti (2009) and Devitt (2012) claim that MMNS test the participants’ meta-linguistic intuitions about theories of reference rather than their linguistic intuitions about the use of referring terms, but one should carefully distinguish between what is thought to be the correct theory of reference and how names are used to talk about things.

MMNS (2009; 2012), Machery (2012), and Machery et al. (forthcoming) have offered seemingly compelling responses to (i) – (iii), and Machery et al. (2009a, b) provide a knockdown reply to (iv). I shall not discuss (i) – (iv) here. Let’s instead dwell on Sytsma and Livengood’s (2011: 319–320; cf. forthcoming) more promising claim that the Gödel vignette suffers from an ambiguity in whether the participants adopt the subject’s (John) or the narrator’s epistemic perspective in deciding who is denoted by each of the answer choices given in the forced-choice test question. Whereas John, remember, is the speaker who uses ‘Gödel’, the narrator is someone who allegedly possesses information that John lacks. Sytsma and Livengood ran a series of experiments showing that this epistemic ambiguity affects the participants’ responses in their study. By parity of reasoning, this suggests that the same ambiguity also accounts for the variation in MMNS’ study. They conclude that the responses to the Gödel vignette do not reliably indicate the participants’ semantic intuitions.

Sytsma and Livengood (2011: 319–320, cf. forthcoming) explain the perspectival ambiguity as an “…asymmetry between John’s knowledge and the narrator’s knowledge”. But what exactly does the narrator know that John fails to know? Sytsma and Livengood are silent on this crucial point. Perhaps, as Genone (2012: 157) suggests, “the narrator knows that the descriptive information associated with ‘Gödel’ is false… whereas [John] lacks knowledge that the associated description is false”. But the vignette tells us that John has learned in College that Gödel is the man who proved the incompleteness of arithmetic. On the assumption that learning that *p* is a way of knowing that *p*, it follows that John knows that Gödel proved the incompleteness theorem.[20] In fact, that is all John knows about Gödel. The narrator’s additional knowledge cannot then be that it is false that Gödel proved that theorem, or that the distinct individual Schmidt was the sole author. For that leads to a contradiction given the factivity of knowledge.

A more promising proposal of what the epistemic asymmetry between the narrator and the subject John consists in is to relativize their knowledge to which suppositions they accept about the actual world (@).[21] Accepting the supposition of the scenario, the narrator knows that Schmidt discovered the incompleteness theorem, but making no supposition about the scenario, John knows nothing about Schmidt. Indeed, given that John accepts the supposition that Gödel discovered the theorem on the basis of what he learned (or was taught) in College, he would seem to know exactly that. Still, the factivity of knowledge does not render this proposal inconsistent, because the two ascriptions of knowledge are true only under distinct suppositions about the way @ is. But this means that given the way @ is, there is no difference in what John and the narrator actually knows. In @ Gödel discovered the theorem, and so in @ the narrator cannot know that Schmidt discovered that theorem, no matter which suppositions the narrator accepts about @. Of course, the narrator may be said to have that knowledge if the supposition the narrator accepts about @ turns out (very surprisingly) to be true, but we know a posteriori that in actual fact things are not that way.

Nevertheless, Sytsma and Livengood are on to something when they detect a perspectival ambiguity in MMNS' test questions. The question is: if the alleged asymmetry between John and the narrator does not pertain to knowledge of @, what else could it consist in? Unbeknownst to John, the narrator asks the participants to suppose that Schmidt was the author of the theorem, and that his friend Gödel got hold of the manuscript and claimed credit for the work. Bearing Section III in mind, to make that supposition is to consider this scenario as a way things might actually (turn out to) be.[22] This means that the participants are being asked by the narrator to answer the question of whom John is in actual fact talking about in that scenario when he uses 'Gödel': (A) or (B)? John is entirely unaware of this scenario. Indeed, as he has never heard of Schmidt, he makes no supposition about its actuality. So, the asymmetry between John and the narrator is not so much epistemic as concerning which counteractual suppositions are in play.[23] Unlike John, the narrator asks the counteractual question of what 'Gödel' picks out if a hypothesis about Gödel is true in @. We can now show that depending on which such perspective the participants adopt, the answer choices given in the forced-choice test question can fail to track their implicit adherence to particular theories of reference.[24]

Suppose first that participant S adopts the narrator's suppositional perspective, which is obviously what MMNS intend S to do. From this perspective, S may opt to answer either (A) or (B) when asked whom John is talking about when he uses 'Gödel', depending on whether S has descriptivist or causal-historical leanings. If S takes 'Gödel' to function as a descriptive name, S will give answer (A). This means S will judge that John uses 'Gödel' to refer to Schmidt in the imagined scenario. The reason is that Schmidt is the person whom the narrator takes to have discovered the incompleteness theorem. The narrator, remember, is supposing that @ is such that Schmidt was the author of that theorem instead of Gödel who merely got hold of the manuscript and claimed credit for the work. If instead S takes 'Gödel' to pick out the individual at the end of the causal-historical chain leading up to John's use of that name, S will give answer (B). Since Gödel is causally responsible for John's tokens of 'Gödel', S will then judge that he is the man whom John is referring to in the scenario in question. So, as long as S adopts the narrator's perspective, the respective answers (A) and (B) seem to track S's semantic intuitions.

Suppose instead participant S* adopts John's perspective. John has no inkling as to what supposition S* is being asked by the narrator to make about @. Since all John knows is that Gödel discovered the incompleteness of arithmetic, S* will answer (A) when asked whom John is talking about when he uses 'Gödel'. Still, S* will take John to use that name to refer to Gödel in MMNS' imagined scenario. This follows regardless of whether S* has descriptivist or causal-historical leanings. If S* takes 'Gödel' to function as a descriptive name, then from John's perspective S* will judge that John is picking out Gödel, because Gödel is the person whom John takes to be the discoverer of that theorem. The same is true if instead S* takes 'Gödel' to refer to the individual who is causally responsible for John's tokens of that name. For Gödel is that individual irrespective of which perspective is adopted. The problem is that (A) was supposed by MMNS to be the exclusively descriptivist option, showing that 'Gödel' picks out Schmidt in the scenario in question. Adopting John's perspective thus involves opting for (A) while judging that John uses 'Gödel' to pick out Gödel. Pace MMNS, answer (A) is therefore no reliable guide to descriptivist intuitions.[25]

5. Conclusion

This paper argued that friends and foes of experimental semantics have failed to pay attention to two distinct types of possible cases involving the referential use of proper names. Both camps have focused on the alleged evidential role of semantic intuitions in the actual and counteractual cases that Kripke brings to bear in support of his semantic arguments rather than the counterfactual cases that he adduces in support of his modal argument. The counteractual and counterfactual cases are meant to elicit such intuitions about certain counteractual and counterfactual possibilities, respectively. And indeed when evaluating the subjunctive conditionals that reflect those counterfactual possibilities, these intuitions do carry some evidential weight, albeit not in a way that requires the exercise of any sui generis faculty of intuition. But semantic intuitions arguably play no epistemic role in determining the actual reference of proper names, or in evaluating the indicative conditionals that reflect the relevant counteractual possibilities. Moreover, once an asymmetry is acknowledged in our vignette between which suppositions the narrator and the subject make about actuality, a novel account of the alleged culturally determined variation in semantic intuitions is forthcoming. Depending on which such suppositional perspective the participants adopt, the upshot was that their answers do not reliably indicate which theory of reference they implicitly adhere to.[26]

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AQ8

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AQ10

[1] MMNS are right that even if Kripke's arguments refute descriptivism, the question of what the correct, fully worked-out theory of reference is has not thereby been settled. Since we currently have no firm conception of what shape the ultimate theory will have, whether finessing all the details will require epistemic reliance on semantic intuitions is hard to predict. For now, we have to start somewhere, and nothing prevents us from sharing MMNS' point of departure.

[2] We follow Soames (op. cit.) in characterizing the view that D_D fixes the reference of *n* as being weaker than the view that D_D and *n* are synonymous, in the sense that the latter entails the former but not the other way around. However, if the issue is approached by contrasting semantics with meta-semantics, the two views are certainly distinct, but one is not logically weaker or stronger than the other. I owe this point to an anonymous referee for this journal.

[3] See also Soames (2005: 16).

[4] Or to use one of Kripke's examples (1980: 48) from which (ITR) can be extracted: 'Nixon' is rigid but 'the US President in 1970' is not, because: "…although someone other than the US President in 1970 might have been the US President in 1970 (e.g., Humphrey might have), no one other than Nixon might have been Nixon." A die-hard descriptivist might try to exploit the fact that sentences of the form 'D_D might not have been D_D' have a true wide-scope reading and a false narrow-scope reading, but here we shall simply ignore such manoeuver.

[5] See for example Yablo (2002) and Chalmers (2006).

[6] Given that exercising such abilities constitute grasp of the semantic content of *n*, and that understanding a proposition *p* as expressed by a sentence that contains *n* involves grasping its semantic content, the current proposal is that in such cases an intuition that *p* justifies belief in *p* in virtue of that intuition being based on understanding of *p*. Chudhoff (forthcoming) offers counterexamples to the general claim that whenever an intuition that *p* justifies belief in *p*, that intuition results from understanding of *p*. Whether this understanding-based view of intuition is correct in all cases where intuitions are claimed to carry evidential weight, as Bealer (2002, 2004) and Ludwig (2007) contend, is a thorny question beyond the scope of this paper.

[7] In this paper we set Kripke's epistemic argument aside.

[8] See for instance Wright (2000: 206–210).

[9] Turning to intuition in such cases seems odd in much the same way an appeal to the intuition that one weighs more than three pounds is a misguided attempt to refute the brain-criterion of personal identity. The example is Williamson's (2007: 214–219). He concedes that skeptical contexts could make such appeal legitimate. For instance, it would not be strange to say 'well, intuitively, that's a mountain' (while pointing at a mountain) in reply to a philosopher who argues that mountains fail to exist. But neither party to the current dispute endorses skepticism about the reference relation. In fairness, it should be noted that Devitt (2011: 423) later

recommends we check linguistic usage, thus seeking direct evidence for the reference relation itself.

[10] Sytsma, Livengood, Sato and Oguchi (forthcoming) take Kripke's Gödel case to show that "descriptivist accounts of proper names cannot handle cases where ignorance leads a speaker to associate some description with the wrong individual." But as Ichikawa et al. (2011: 8) correctly note, the Gödel case is not part of an argument from ignorance. It rather illustrates that descriptivism makes false predictions about the reference of *n* even when S associates a D_D that is uniquely satisfied by the actual referent of *n*. Pace Ichikawa et al., as we shall now argue, these predictions pertain to the reference of *n* in counteractual scenarios.

[11] Following Chalmers (2004: 159; 2006: 59), when we consider a counterfactual scenario, we make a counterfactual supposition: given the way @ is, what if it had been such-and-such a way? In contrast, when we consider a counteractual scenario, we make a supposition about a way @ might be: what if @ is (or turns out to be) such-and-such a way? To use Stalnaker's example (2001: 146) we can ask 'what if Oswald had not killed Kennedy?' or we can ask 'what if Oswald did not kill Kennedy?' In the first case, given that Oswald did actually kill Kennedy, we want to know what would have happened had he not done so. Presumably, Kennedy would not have been killed. In the second case, we want to know what follows if Oswald is not the killer. Certainly, someone else is. These two distinct ways of considering possible cases are familiar from two-dimensional semantics. To what extent Kripke (1980) would endorse this framework is a vexed question. We shall draw on Chalmers' interpretation (2004; 2006; 2011) of Kripke, which stems from his so-called epistemic two-dimensionalism, bearing in mind that Soames (2005), Salmon (2005), Stalnaker (2001) and others read Kripke rather differently. Still, as just illustrated, they share many two-dimensional distinctions, and they can also agree that these are implicitly put to use by Kripke is his attack on traditional descriptivism.

[12] An anonymous referee suggested that since Kripke's passage is temptingly (albeit incorrectly on my view) read as pertaining to a counterfactual scenario, one should treat the somewhat subtle mistake made by these philosophers with charity. I do agree that much of the dispute over experimental semantics cannot be resolved merely by paying attention to those two readings of that passage. The more modest goal of this paper is merely to establish that rational intuitions play very different epistemic roles when brought to bear on counterfactual and counteractual possibilities.

[13] We henceforth adopt the convention that *n* refers *at w* when *w* is considered as counterfactual, and *n* refers *in w* when either $w = @$ or *w* is considered as actual.

[14] See also Weatherson (2001) and Yablo (2002). Grammatical moods provide a reliable but fallible guide to counterfactual and counteractual possibilities: as von Fintel illustrates (2012),

while some subjunctive conditionals fail to convey counterfactuality, some indicative conditionals do express counterfactuality.

[15] In contrast, as we saw in Section II, evaluation of counterfactual conditionals is independent of S's knowledge. For instance, both 'if the Queen had come to my wedding yesterday, I would have met her' and 'if the Queen was at my wedding yesterday, I didn't meet her' are true, but the known fact that I did not meet the Queen is retained only under the indicative supposition.

[16] While the foregoing is based specifically on Chalmers' notion of epistemic modality (2004; 2006; 2011), (16) and (17) also come out false for similar reasons on related accounts. Thus Nolan (2003) provides an account of the semantics of indicative conditionals in terms of a similarity relation defined on *w*. Closeness of *w* is measured by a metric of similarity. When evaluating an indicative conditional, we look (i) at the *w* where the antecedent is true, (ii) where what we know is kept fixed, insofar as it is compatible with the antecedent, (iii) to the extent that (i) and (ii) leave the nature of @ open, the similarity metric is otherwise similar to that of the subjunctive conditional. Importantly, on Nolan's account (2003: 238), the truth-conditions of a sentence expressing an indicative conditional can vary from informational context to informational context. Similarly, (16) and (17) are rendered false even on Yablo's account (2009: 454) where p → q mixes the indicative and subjunctive conditional.

[17] There is a striking disanalogy in Kripke's (1980) between the examples, e.g., 'Nixon' and 'Aristotle', which are used in the course of the modal argument, and the examples, e.g., 'Gödel', 'Columbus' and 'Feynman', which are used in the course of the semantic arguments, in that Kripke explicitly appeals to intuitions about possible cases involving the referents of these names only in the case of the former. In the case of the latter names, Kripke talks directly about who we are referring to if a hypothesis about @ is true, rather than citing our intuitions about who we are referring to.

[18] Just as Evans (1979) distinguished between superficial and deep necessity, Davies (2004: 110–111) distinguishes between superficially and deeply rigid designators.

AQ6

AQ7

[19] Indeed a priori true, assuming somewhat contentiously that the descriptions in (16) capture the primary/epistemic intension of 'Gödel', which is a function from *w* considered as actual (a space of scenarios) to referents in those *w* (scenarios). The primary/epistemic intension of a sentence is true in *w* if *w* verifies that sentence.

[20] Orthodoxy has it that 'learns that' is a success verb. Hazlett (2010) offers an example of a non-factive use: 'in school we learned that World War I was a war to "make the world safe for democracy," when it was really a war to make the world safe for the Western imperial powers.' As Buckwalter (2014) notes, this occurrence of 'learned that' can be literally read as 'was

taught that'. But no linguistic cues suggest the vignette is such that 'John has learnt in College that Gödel proved the incompleteness theorem' is synonymous with 'John was taught in College that Gödel proved the incompleteness theorem'. After all, nobody disputes that 'has learnt that' has a factive use in many, but perhaps not all, cases where the embedded proposition is true. Thus, a salient reading of 'learned that' in 'John learned in College that Gödel proved the incompleteness theorem, when in actual fact Schmidt proved that theorem' is arguably 'was taught that'. So, at least some participants in the experiment may well understand 'learnt that' as requiring truth. Compare with 'hearing that' which also has both factive (perceptual) and non-factive (testimonial) uses. When used in the factive way, 'hearing that' arguably expresses a way of knowing. Thanks to an anonymous referee for raising the point about learning.

[21] An anonymous referee made this interesting suggestion.

[22] Just as in Kripke's original Gödel case, MMNS's narrator asks us, or the participants, to suppose Gödel was not the author of this theorem, but that a man called 'Schmidt' "actually did the work in question". Similarly, in Sytsma and Livengood's (2011: 324) twist on MMNS's vignette, the participants are asked the question of whether they take John to "actually be talking about the person who […] is widely believed to have discovered the incompleteness of arithmetic, but actually got hold of the manuscript and claimed credit for the work". In all three cases are we thus being asked to make a supposition about a way @ might (turn out to) be, even though we, or the participants, may well know a posteriori that @ is not that way.

[23] Sytsma, Livengood, Sato and Oguchi (forthcomning) write that "from the narrator's perspective, Schmidt discovered the incompleteness of arithmetic […], but as far as John knows, Gödel discovered the theorem". Formulating the perspectival ambiguity in this way is consistent with John and the narrator accepting different suppositions about @ without different knowledge ascriptions being true of them.

[24] We have argued that the narrators in MMNS's and Sytsma and Livengood's vignettes are best interpreted as asking the participants to entertain counteractual scenarios, just as Kripke asked us to consider his original Gödel case as a way things might actually (turn out to) be, but I have offered no proof that the participants reading those vignettes also understand the narrator's question that way. Short of experimental testing, which would make for a different paper, it seems impossible to completely rule out any misunderstanding of that question. But on the assumption of proficiency in English, the linguistic cues contained in the vignette makes it unlikely that the participants should mistake a counteractual scenario for a counterfactual scenario. Ordinary competent speakers are sensitive to that distinction when they reliably provide correct answers to pairs of questions such as Stalnaker's (2001: 146) 'what if Oswald had not killed Kennedy?'/'what if Oswald did not kill Kennedy?'. Likewise, such speakers can

reasonably be expected to be tuned into the difference between ‘what ‘Gödel’ refers to if Schmidt discovered the incompleteness theorem’ and ‘what ‘Gödel’ would refer to if Schmidt had discovered the incompleteness theorem?’. True, unlike Kripke’s original case, the vignettes complicate matters by asking the participants what someone else, i.e., John, uses ‘Gödel’ to refer to on the supposition that the parable about Schmidt is true. But John is not stipulated to be any less conceptually competent; in fact John resembles most participants in that all he knows about Gödel is that he proved the incompleteness of arithmetic. So, the introduction of John should not lead the participants to misunderstand the test question in the envisaged way. Bear also in mind that MMNS (2009; 2012) have already argued against Ludwig (2007), Deutsch (2009), Martí (2009) and Devitt’s (2012) claim that the vignette trades on distinct types of ambiguities, which might have lead the participants astray. I should like to thank an anonymous referee for raising the issue of the participants’ understanding.

[25] Reflect that whenever a participant reports a descriptivist intuition, she must be expressing a descriptivist intuition, whatever perspective she adopts. In which case, MMNS’s results already demonstrate the presence of a very large proportion of descriptivist intuitions in both East Asia and America, which is surprising. I owe this observation to an anonymous referee.

[26] Many thanks to Please change footnote 26 to:

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